

# Notice of Allowability

Application No.

10/647,035

Examiner

Phuong Phu

Applicant(s)

LENNEN, GARY R.

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the Amendment filed on 3/5/07.
2. ☒ The allowed claim(s) is/are 3-7, 10, 12-15, 18, 20-23, 27, 31 and 38.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is responsive to the Amendment filed on 3/5/07. Accordingly, claims 3-7, 10, 12-15, 18, 20-23, 27, 31 and 38 are currently pending; and claims 1, 2, 8, 9, 11, 16, 17, 19, 24-26, 28-30, 32-37 and 39-41 are canceled.

### **REASONS FOR ALLOWANCE**

2. Claims 3-7, 10, 12-15, 18, 20-23, 27, 31 and 38 are allowed.

3. The following is an examiner's statement of reasons for allowance:

References 5438591, 6721366, 5311523, 4669095 and 6177835 are additionally cited because they are pertinent to the claimed invention.

-Regarding to independent claim 3, none of prior art of record teaches or suggests a decoding method as claimed. Stralen (6,940,927), previously cited, teaches the claimed method except Stralen invention lacks of procedures of (a) computing a first partial probability of a current data bit at a current time epoch by using a computed inphase and quadrature correlation data; (b) repeating the computing procedure (a) for a plurality of time epochs preceding said current time epoch to obtain a plurality of partial probabilities of said current data bit; (c) computing a total probability of said current data bit using said plurality of partial probabilities of said current data bit and (d) outputting said current data bit as being "one" or "zero" at said time epoch based on said total probability. It would not have been obvious for one skilled in the art to implement Stralen in view of other prior art of record for leading such the implementation to the claimed invention.

-Regarding to independent claim 4, none of prior art of record teaches or suggests a decoding method as claimed. Stralen teaches the claimed method except Stralen invention lacks

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of procedure of multiplying a current data bit by an absolute data polarity. It would not have been obvious for one skilled in the art to additionally implement Stralen in view of other prior art of record with a procedure of multiplying a current data bit by an absolute data polarity for leading such the implementation to the claimed invention.

-Regarding to independent claims 10 and 18, none of prior art of record teaches or suggests a decoding method as claimed. Dent (6,944,206), previously cited, in view of Stralen teaches the claimed invention except Dent in view of Stralen fails to teach procedures of (a) computing a first partial probability of a current data bit at a current time epoch by using a computed inphase and quadrature correlation data; (b) repeating the computing procedure (a) for a plurality of time epochs preceding said current time epoch to obtain a plurality of partial probabilities of said current data bit; and (c) computing a total probability of said current data bit using said plurality of partial probabilities of said current data bit. It would not have been obvious for one skilled in the art to implement either one or combination of Dent and Stralen in view of other prior art of record for leading such the implementation to the claimed invention.

-Regarding to independent claims 12 and 20, none of prior art of record teaches or suggests a decoding method as claimed. Dent in view of Stralen teaches the claimed invention except Dent invention in view of Stralen lacks of procedure of multiplying a current data bit by an absolute data polarity. It would not have been obvious for one skilled in the art to additionally implement either one or combination of Dent and Stralen in view of other prior art of record with a procedure of multiplying a current data bit by an absolute data polarity for leading such the implementation to the claimed invention.

-Regarding to independent claim 27, none of prior art of record teaches or suggests a decoding apparatus as claimed. Stralen teaches the claimed invention except he fails to teach means of performing a Hamming code data correction operation on a plurality of outputted data bits. In Stralen, a trellis code data correction operation is utilized. It would not have been obvious for one skilled in the art to implement Stralen in view of other prior art of record with a Hamming code data correction operation for leading such the implementation to the claimed invention.

-Regarding to independent claims 31 and 38, none of prior art of record teaches or suggests a decoding apparatus as claimed. Dent in view of Stralen teaches the claimed invention except Dent in view of Stralen fails to teach means of performing a Hamming code data correction operation on a plurality of outputted data bits. In Dent in view of Stralen, a trellis code data correction operation is utilized. It would not have been obvious for one skilled in the art to implement either one of combination of Dent and Stralen in view of other prior art of record with a Hamming code data correction operation for leading such the implementation to the claimed invention.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Phuong Phu  
03/28/07

**PHUONG PHU  
PRIMARY EXAMINER**

Phuong Phu  
Primary Examiner  
Art Unit 2611